UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,595	12/07/2001	David S. Soane	50225-8011.US02	6546

33603 7590 05/17/2004

ACLARA BIOSCIENCES, INC.
1288 PEAR AVENUE
MOUNTAIN VIEW, CA 94043

EXAMINER	
HARAN, JOHN T	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/016,595	SOANE ET AL.	
	Examiner	Art Unit	
	John T. Haran	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *32-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *32-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/10/04 has been entered.

Claim Objections

2. Claim 32 is objected to because of the following informalities: in the preamble it appears "on" should read - - one - -. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 32-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brackett (U.S. Patent 4,875,956) in view of Parce et al (U.S. Patent 5,885,470).

Brackett is directed to a method of making a fluidic module wherein a first and second sheet of acrylic plastic substrate with planar surfaces, one which includes a structure in the surface, are apposed to one another and heated to 300 degrees Fahrenheit under pressure so that molecules at the interface of the acrylic substrates

transmigrate to form a morphological bond (See abstract; examples; Column 6, lines 37-47). Brackett also teaches annealing the bonded substrate at a temperature lower than the bonding temperature to create a stress free and sealed interface (Column 7, lines 25-39). It is noted that the glass transition temperature of acrylic is 100 degrees Celsius (212 degrees Fahrenheit), as noted in the Modern Plastics Encyclopedia, so the acrylic is heated above the glass transition temperature. Brackett is silent towards the structures being microstructures.

It is notoriously well known and conventional in the fluidic module art to have microfluidic modules that contain microstructures, as shown for example in Parce et al (Column 2, lines 63-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to form microfluidic modules from substrates with microstructures such as microchannels of capillary dimension, as is conventional in the art as evidenced by Parce et al, in the method of Brackett.

Brackett also teaches that the temperature is never so great as to cause the material to become viscous, which would lead to deformation and filling of the machined channels (Column 6, lines 37-40). Furthermore, Parce teaches bonding two substrates, one of which has microchannels of capillary dimensions, under heat and pressure above the glass transition temperature for a time sufficient to bond the surfaces together and there is no suggestion that the microchannels are deformed. One skilled in the art would have readily appreciated that Brackett teaches that deformation of the microchannels would be undesirable and would be motivated to adjust the bonding temperature so that such does not occur. It would have been obvious to one of ordinary

skill in the art to bond the substrates together under sufficient heat and pressure to form a bond without out deformation of the microchannels, as such would not be desired as noted in Brackett, in the method of Brackett as modified above to have microchannels of capillary dimensions.

It is noted that support for the limitation of "heating the planar surface of the apposed first and second plastic substrates above their glass transition temperature for a time sufficient to bond the surfaces together" only goes back to 6/18/97 in application 08/878,437, now U.S. Patent 6,176,962.

Regarding claim 33, one skilled in the art would have readily appreciated heating the substrates only as much as necessary to cause the molecules to transmigrate to eliminate unnecessary use of energy and to avoid deformation of the microchannels. Furthermore one skilled in the art would have readily appreciated that this temperature would have been dependent upon a variety of factors including the material worked upon. It would have been within the purview of one skilled in the art to only heat the substrates to a temperature 2 to 5 degrees Celsius above the glass transition temperature.

Regarding claim 34, polymethylmethyacrylate is a well known and conventional material for microfluidic devices, as shown for example in Parce et al (Column 5, line 65), and it would have been obvious to use conventional materials in the method of Brackett.

Response to Arguments

4. Applicant's arguments filed 3/10/04 have been fully considered but they are not persuasive.

Brackett teaches that the bonding temperature is not so high that the material of the substrate becomes viscous and fills or deforms the machined structures and one skilled in the art would have readily appreciated doing the same when the machined structures are microchannels of capillary dimension.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(571) 272-1217**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John T. Haran
Examiner
Art Unit 1733